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Negus et al.

For:

Percutaneous Myocardial Revascularization Marking and

Therapeutic or Diagnostic Agent Delivery System

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1. A percutaneous myocardial revascularization marking and

2 therapeutic or diagnostic agent delivery system comprising:

a treatment catheter having a proximal end interconnected with a source of tissue ablative energy and a distal end for applying that energy to the heart wall to create a channel therein; and

a channel marking and drug delivery catheter subsystem connected to an imaging medium source and a source of a therapeutic or diagnostic agent and having a distal end proximate the distal end of the treatment catheter for applying both an imaging medium and the therapeutic or diagnostic agent in or proximate the channel.

2. The system of claim 1 in which the channel marking and drug delivery catheter subsystem includes two catheters, one marking catheter having a distal end proximate the treatment catheter for applying the imaging medium, and a therapeutic or diagnostic agent delivery catheter having a distal end proximate the treatment catheter for applying the therapeutic or diagnostic agent in or proximate the channel.

1	3. A method of marking and delivery to a percutaneous myocardial
2	revascularization channel a therapeutic or diagnostic agent, the method comprising:
3	inserting a catheter into a chamber of a heart of a patient;
4	applying tissue ablative energy through said catheter to create a channel in
5	the heart wall;
6	introducing to the heart wall in or proximate the channel an imaging
7	medium for marking the position of that channel for imaging;
8	viewing said imaging medium via an external imaging device
9	positioned outside of said patient; and
10	introducing to the heart wall proximate the channel or in the
11	channel a therapeutic or diagnostic agent.